AMENDMENTS TO THE DRAWINGS

The attached sheets of drawings includes changes to Figs. 1C, 4, and 5.

Attachments: Replacement sheets

REMARKS

Claims 1-16 have been examined, with all claims rejected. Applicant has added new claims 17-37 to more fully claim the invention.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) and (5) because the reference numeral "410" has been used to designate both the "Reconfigurable DECODE Function Kernel Plane" and the "Bit Field Extraction." In response, Applicant has amended Fig. 4 and the specification to replace the reference numeral referring to the "Reconfigurable DECODE Function Kernel Plane" with reference numeral "411".

Also, the Examiner asserts that in Figure 4, "100b" should be "101" to be consistent with the disclosure. Applicant believes the Examiner intended to instead refer to Fig. 1C. Applicant has amended Fig. 1C accordingly.

Finally, the Examiner asserts that the drawings include reference numerals not mentioned in the specification, that is 506, 510, and 512. In response, Applicant has amended Fig. 5 to remove these reference numerals from the figure.

Specification

The disclosure is objected to because of the following: (1) "I 02a" should read "102a" on page 8, line 35, and page 13, line 22; (2) "11Oa" should read "110a" on page 9, line 6; and (3) "501-403" should read "501-503" on page 44, line 16. Applicant has amended the specification to correct these typographical errors.

Applicant has also amended the specification to update the references to the related applications.

Claims Rejections 35 USC 103

Claims 1, 2, 4, 7-9, and 12-15 are rejected under 35 USC 103(a) as being unpatentable over Mobin et al. (U.S. Patent No. 6,522,696) in view of Cahill (U.S. Patent No. 5,150,384). Claims 3 and 16 are rejected under 35 USC 103(a) as being unpatentable over Mobin et al. in view of Cahill, as applied to claim 1, and further in view of Sato (U.S. Patent No. 5,982,763). Claims 5, 6, 10, and 11 are rejected under 35 USC 103(a) as being unpatentable over Mobin et al. in view of Cahill, as applied to claim 1, and further in view of Wright et al. (U.S. Patent No. 5,309,482). Applicant respectfully traverses these rejections for the reasons set forth below.

Claims 1-15

Claims 1-15 are directed to a receiver for processing time division multiple access (TDMA) signals having a sampler 303 for sampling a TDMA signal received from a transmission channel, a derotator 304 for correcting for frequency offset in the sampled TDMA signal, a matched filter 306 for correcting for the response of the transmission channel in the received TDMA signal, an equalizer 307 to which is applied an output signal from the matched filter, a deinterleaver 309 to deinterleave the received TDMA signal, and a channel decoder 310 for decoding the received TDMA signal after it is deinterleaved.

Mobin is directed to adaptive frequency correction in a wireless communications system. Fig. 1A is a block diagram of a receiver 28, which includes an adaptive frequency correction AFC rotation sub-unit 32. This unit 32 rotates the phase of the incoming signals based on the rotation frequency offset signal, in order to reduce communication errors. The corrected signals are then coupled to an input terminal of an equalizer 34, which is employed to decode the signals received by receiver 28. One of the output terminals of equalizer 34 is coupled to an input terminal of a deinterleaver 36. The receiver also includes a channel decoder 42, which performs the reverse function employed by a convolutional coder, and comprises a Viterbi decoder. The output signal of channel decoder 42 is coupled to the input terminal of an ordering and tailing circuit 70, which provides a signal to an input terminal of a cyclic decoder 72, and the output signal of the cyclic

decoder 72 is coupled to an input terminal of a speech decoder 74. Finally, the receiver 28 also includes an automatic frequency correction unit 58, which is responsible for acquiring and tracking the relative frequency or phase offset between signals shifted in response to automatic frequency correction rotation sub-unit 32 and signals transmitted by a transmitter employing signal processor 10. The adaptive frequency correction unit then provides a feedback signal to adaptive frequency correction rotation subunit 32. This feedback signal represents a rotation frequency offset signal, AFC_F_rotor, calculated by the adaptive frequency correction unit 58. In response to this feedback signal, adaptive frequency correction rotation sub-unit 32 rotates the phase of incoming signals in accordance with the rotation frequency offset signal AFC_F_rotor, so as to adjust their phase and substantially reduce communication errors.

Cahill is directed to a carrier recovery apparatus having an adjustable response time determined by carrier signal parameters. As shown in Fig. 1, the apparatus has a receiver 103, which includes, among other elements, an adjustable gain preamplifier 105, a matched filter 137, and a sampler 139.

The Examiner admits that Mobin does not teach a matched filter for correcting for the response of the transmission channel in the received TDMA signal, and applies Cahill in an attempt to make up for this deficiency.

Cahill does not teach or suggest a matched filter for correcting for the response of the transmission channel in the received TDMA signal, as required by claims 1-15. As can be seen from Fig. 3 of the present invention, there are two matched filters– a pulse shaping matched filter 302 to which is applied an output signal from the interpolation filter 301, and a matched filter 306 to which is supplied an output signal from the scaler 305. The matched filter 137 in Cahill is a pulse-shaping matched filter more similar to the matched filter 302 of the present invention. Cahill's matched filter 137 does not correct for the response of the transmission channel in the received TDMA signal, as does the channel matched filter 306 of claims 1-15. Thus, claims 1-15 are patentable over the applied references for at least this reason.

Claims 13 and 14

Dependent claim 13 further recites a received signal quality metric indicator 318 for measuring signal quality of the received TDMA signal.

Contrary to the Examiner's statements on pages 7-8 of the Office Action, Mobin's automatic frequency correction unit 58 is not equivalent to the claimed received signal quality metric indicator 318 for measuring signal quality of the received TDMA signal, as required by claim 13. As is clear based on the name of the element, the received signal quality metric indicator uses a signal-energy-to-noise estimation algorithm, whereas Mobin's "adaptive automatic frequency correction update tracking" unit 58 employs an adaptive update and tracking algorithm, a completely different function. Thus, claim 13 is patentable over the applied references for this additional reason

Claim 14, which depends from claim 13, further recites that the measurement of signal quality (of the received signal quality metric indicator 318) is used to condition an output signal from the channel decoder 310. Even assuming, for the sake of argument that the Examiner were correct in that Mobin's automatic frequency correction unit 58 were equivalent to the claimed received signal quality metric indicator 318, it is clear from Fig. 1A that the output of the unit 58 is not used to condition Mobin's channel decoder 42. Thus, claim 14 is further patentable for this additional reason.

Claim 16

Claim 16 is directed to a receiver for processing time division multiple access (TDMA) signals. The receiver includes an interpolation filter 301 to which the TDMA signals are applied, a pulse shaping matched filter 302 to which is applied an output signal from the interpolation filter, a sample selector 303 to which is applied an output signal from the pulse shaping matched filter, a derotator 304 to which is applied an output signal from the sample selector, a scaler 305 to which is applied an output signal from the derotator, a matched filter 306 to which is supplied an output signal from the scaler, an equalizer 307 to which is applied an output signal from the matched filter, a deinterleaver 309 to which is applied an output signal from the equalizer, a channel decoder 310 to

which is applied an output signal from the deinterleaver, and a block decoder 311 to which is applied an output signal from the channel decoder.

Claim 16 recites two matched filters – a pulse shaping matched filter 302 to which is applied an output signal from the interpolation filter 301, and a matched filter 306 to which is supplied an output signal from the scaler 305. The Examiner admits that Mobin does not teach the pulse shaping matched filter 302 (and applies Cahill in an attempt to make up for this deficiency), but is completely silent with regard to the matched filter 306. As discussed above with respect to claims 1-15, the matched filter 137 in Cahill, to which the Examiner refers, is more similar to the pulse shaping matched filter 302 of the present invention. Cahill does not teach or suggest a matched filter 306 to which is supplied an output signal from a scaler, as required by claim 16. Thus, claim 16 is patentable over the applied references for at least this reason.

Claims 17-37

Claims 17-37 correspond to claims 1-16, and are patentable over the applied references for substantially the same reasons as claims 1-16.

In view of the above, Applicant believes the pending application is in condition for allowance.

Dated: June 29, 2005

Respectfully submitted,

By Laura C. Brutman

Laura C. Brutman
Registration No.: 38,395
DARBY & DARBY P.C.
P.O. Box 5257
New York, New York 10150-5257
(212) 527-7700
(212) 527-7701 (Fax)
Attorneys/Agents For Applicant

Attachments